

Transform Your Data-Driven Business

Drive Performance, Power and Security
with Future-Ready IT



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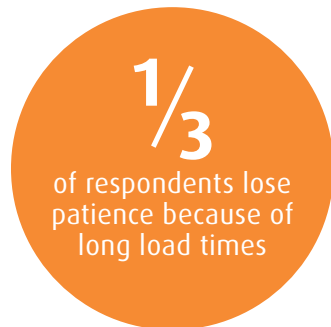
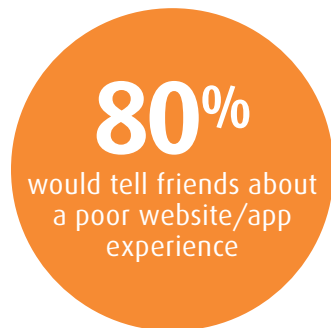
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INTRODUCTION

Are you delivering on consumer expectations?

It's a fact of our digital age: Today's hyper-connected consumers want more personalization and relevancy with every brand interaction¹, and more consumers are willing to share information with brands they trust, if it means that they'll get better service, more relevant offers, lower prices, or some other benefit.² Yet, with increased personalization comes hefty data loads, which can bog down older systems and lead to slower processing, longer cycles, and overall sub-par performance. And consumers are taking notice.

Consumers are more demanding and less forgiving of poor website/application performance:



More data = more opportunities to grow your business

As the digital world continues to shift how consumers and businesses interact and transact, the amount of data created by digital interactions continues to skyrocket, quadrupling between 2014 and 2017, to over eight exabytes every month³ (or the equivalent of 3,000GB every second!).

High-performance computing allows companies to unlock key business insights that fuel agile decision-making.

Traditionally, processing was batch driven; data sets were analyzed on a need-to-know basis in a process that often resulted in slow and reactive "after the fact" decision-making. More recently, the advent of IT systems with higher processing power led to greater business agility. Data analysis shifted to a more proactive process, where decision-makers could visualize their customers' wants and needs in close-to-real-time. Then, in the last 7 to 10 years, advanced methodologies like deep learning, machine learning and AI have helped more companies, large and small, get ahead of the game by unlocking insights in real time and allowing for more agile decision-making that can have a profound effect on the revenue potential of their businesses.

But for many companies, their IT infrastructure just doesn't measure up. They're increasingly on the hot seat to maintain high-functioning IT stacks that can deliver ever-higher performance and uptime, even while managing the kind of heavy workloads brought about by the computing demands of today's emerging technologies. And so, they're choosing to trade in their inherent hardware limitations and costly third-party modeling solutions for more agile infrastructure that's based on GPU processing or in-memory processing, and even more recently, integrated hardware/software appliances specifically designed to support today's need for split-second decision-making support.

INTRODUCTION

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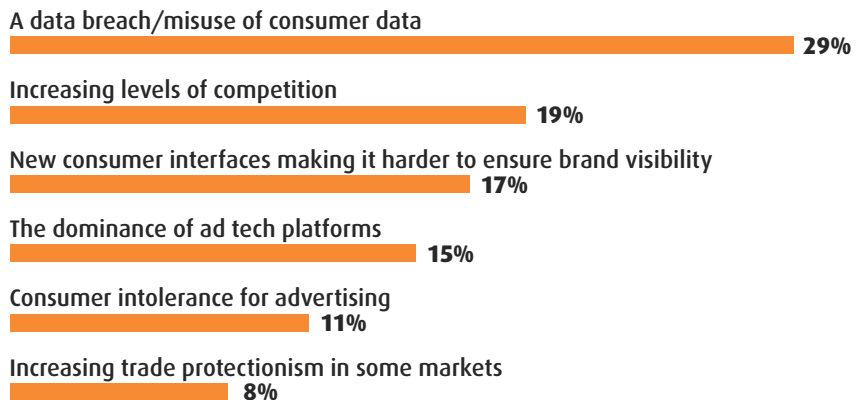
“
To glean more meaningful insights that can drive your business forward, you’ve got to have the computing power to back it up.”

Be it serving up online insights for consumers (including hyper-personalized recommendations or real-time reviews); supply chain intelligence that manages inventory and spend; logistics and routing processes, and beyond—high-performance-computing-driven applications and explosive growth of data provide endless opportunities to drive business forward and enhance the customer experience.

Yet, with more data comes even greater importance and responsibility to protect that data. Larger and more complex data stores and data lakes can become prime targets for cybercriminals looking for any opportunity to make money from your customers’ sensitive information.⁴

Strategic Risk that Worries Marketing Executives Worldwide the Most, May 2018⁵

% of respondents



One-third of senior-level marketers and CMOs worldwide said that a data breach was the strategic risk they’re worrying about most now and over the next few years,⁵ even more so than the impact that increasing levels of competition and reliance on new technology interfaces will come to have on their businesses. Some of the most highly-targeted industries include Healthcare, Public Sector, Travel (i.e., hotels, resorts, etc.) and Retail, according to an annual study⁶ by Verizon.

With breaches experienced by big-name brands like Equifax, JP Morgan Chase, Reddit, Target, Under Armour and Verizon (to name only a few), it’s clear that cyberattacks are proliferating at a time when marketers are becoming increasingly reliant on user data. At the same time, the demands for data monitoring, compliance and overall data security continue to grow.

Meanwhile, the introduction of legislation like GDPR is a sign that data owners will continue to face an increasing burden to secure customer data.

INTRODUCTION

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With this in mind: What's a forward-thinking IT professional to do if they want to stay on the leading edge of technology while also protecting their most important business assets (i.e., their clients) from cybersecurity threats?

Enter IBM POWER9™, the super-powerful processor that tech-savvy business leaders count on to deliver significant improvements in performance and security, and the high-performance processing workhorse that elevates the tech stacks of the most cutting-edge companies in the marketplace today (e.g., Google and the U.S. Department of Energy's Oak Ridge National Labs' clean energy and national security science facilities).⁷



Google's choice for IT "reliability and robustness"⁸ is IBM POWER9

With its super-powered acceleration capabilities and built-in array of cutting-edge technology, POWER9 is leading the charge in the enterprise IT industry. So much so that tech giant Google has deployed their "Zaius" server platform, based on POWER9 processor technology, to support their data centres' production environment workloads.

Calling POWER9 "Google Strong" at the OpenPOWER Summit in Las Vegas in March 2018, Google systems hardware engineer Maire Mahony cited several features that make it the perfect choice for their high-performance-computing needs, including:

- **more cores and threads to support core Google search capabilities**
- **more memory bandwidth for recurrent neural network (RNN) machine learning executions, and**
- **faster and "more open" flash NAND sitting on the OpenCAPI acceleration bus.**

Learn more about the POWER9 capabilities that most interested data-driven powerhouse Google [here](#).

POWER9: Your High-Performance Processing Workhorse

Whether you're looking for ways to modernize your data centers using advanced computing methodologies, planning a major tech overhaul that creates better integration across your organization, or you're simply looking to gain better and more secure performance from your IT stack, you'll find everything you're looking for (and more!) in the POWER9 processor and architecture.

- 1. Enhanced performance with less lag-time on business-critical activities:** POWER9 core and chip architecture delivers superior computing power that's capable of supporting workload-intensive demands, from big data analysis and machine learning to AI and other emerging methodologies that enable more personalized and targeted online customer experiences.

Plus: POWER9 is the only processor with state-of-the-art I/O subsystem technology built-in—including next-gen NVIDIA NVLink, PCIe Gen4, and OpenCAPI—for accelerated bandwidth and reduced latency on activities that can make or break your business.

Performance vs.x86

9.5x

max I/O bandwidth

2x

high performance cores

2.6x

more RAM supported

1.8x

more memory bandwidth

The POWER9 difference—enhancements

IBM's latest addition to their processor family, the POWER9 processor and architecture delivers revolutionary improvements in performance and security that blow older-generation processors out of the water.

With up to 1.5x the performance of its POWER8 predecessor and 2x the high-performance cores of Intel-based x86 appliances, POWER9 is built for acceleration and is the ideal platform for enabling open innovation at the enterprise level.

Previously, where x86 has been considered an industry standard in throughput and response time, POWER9 offers up to 9.5x the memory bandwidth of this older processing architecture. With IBM's POWER9 computing and processing power at the heart of your IT infrastructure, you can expect up to 4x faster training times, 2.6x more RAM supported and 1.8x more memory bandwidth than x86.

The result: Faster processing for your heaviest enterprise workloads, the strongest support for the most demanding computing needs of the market today, and the ability to scale your system to meet the data-intensive requirements for your growing business of the future.

POWER9: *Continued*

2. **Built-in security “silver bullets”:** POWER9 comes pre-loaded with all critical security features and fixes, delivered and turned-on by default, with:
 - Lowest PowerVM and OS security vulnerabilities
 - AIX Trusted Execution, Security expert, RBAC
 - Power Security/Compliance automation with trusted boot and network connect and real-time alerts
 - Enhanced patch planning/management
 - P9 hardware-based TPM

All this, in a cloud-ready, enterprise-level platform that’s easy to implement and enables safe and secure ecosystem integration.

“
...(**POWER9**
processors and
architecture
are) optimized
to secure
your business
information...”

Protecting your most important business assets—your clients and their data

As *The Economist* quipped in May 2017, in a number of ways “the world’s most valuable resource is no longer oil, but data.”⁹

Data points power much of today’s emerging technology, including high-performance applications like AI, marketing automation and predictive analytics that allow more businesses to compete on the global stage. And much like oil and similar natural resource supplies, you’ve got to protect your valuable data from the dangers of poorly structured systems, or worse, all-out attacks.

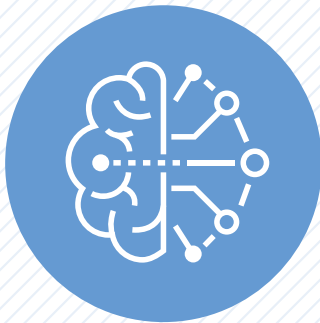
Rest assured, POWER9 has you covered. Security is integrated into each layer of the hardware and software on POWER systems.¹⁰ Meanwhile, the scale-out infrastructure of POWER9 allows you to grow securely as you go, with cloud-enabled servers pre-loaded with firmware and OS security patches that mitigate known vulnerabilities, including Meltdown and Spectre security flaws¹¹.

The result: A mighty system that’ll crunch huge volumes of both structured and unstructured data, optimized to secure your business information while turning your clients’ data points into actionable intelligence that can move the needle on your organization’s goals. All this, without reducing the computing speed and performance you’ve come to expect from IBM POWER systems.

POWER9: *Continued*

3. **Future-proof technology at your fingertips:** POWER9 can be optimized for a range of advanced applications and functions. From traditional business operations and computing platforms (think ERP, financial systems, CRM and Oracle databases, to IBM AIX, SAP HANA and Linux) to deep learning, machine learning and AI frameworks like Chainer, TensorFlow and Caffe, not to mention leading-edge technology (custom and open source apps, as well as enhanced NVIDIA NVLink and PCIe Gen4), the future-forward POWER9 architecture is designed to meet your business needs today, while adapting to your growth potential of tomorrow.

Plus: You get cloud-ready, quick and easy integration, with OpenCAPI architecture that's engineered to allow you to mix and match a wide range of accelerators and storage controllers to meet your AI computing needs.



AI and the POWER9 advantage

IBM provides the solutions needed to advance high-performance computing and AI, and to solve the biggest challenges in the global marketplace today. The POWER9 chip was built from the ground up to smash today's most advanced data applications—and the next generation of AI workloads. Specifically designed to enable cutting-edge AI innovation, POWER9 delivers significant improvements¹² on the most popular AI frameworks, including 3.7x greater performance when running models on Chainer and 3.8x with Caffe.

POWER9 was designed to exploit specialized silicon, such as GPUs, which accelerate the type of math and information processing to power new cognitive algorithms.

The result: An AI superhighway for insights that can drive transformational outcomes for clients in every industry.

SUMMARY

“*POWER9 is the Swiss Army knife of machine learning you need to move your business forward.*”

*Patrick Moorhead, principal analyst
at Moor Insights & Strategy*

The most successful companies in our ultra-competitive marketplace know how to transform data into insights and real-time initiatives that influence consumer interactions and transaction.

Whether you're looking to modernize your data center or improve other existing infrastructure, your smartest investment is in technology that's designed to power both the workloads of today and the next-gen solutions of tomorrow.

With enhanced performance, quick and easy integration, built-in security measures, and future-proofed functionality unmatched by other technology on the market today, it's no wonder that Patrick Moorhead, top-ranked industry analyst and principal at Moor Insights & Strategy, called POWER9 "the Swiss Army knife of ML acceleration as it supports an astronomical amount of IO and bandwidth, 10X of anything that's out there today."¹³

Why Softchoice:

Simply put: We deliver best-in-class technology combined with an insights-led solution approach that's designed to meet your business' unique requirements.

Softchoice works with you to transform Hybrid IT environments and govern them with agile infrastructure, data protection and high availability. By wrapping our arms around your traditional infrastructure, we can determine the best locations for your business applications, aid you in securely adopting the Public Cloud and successfully transform your data center.

With a Softchoice solution, you get a tailored roadmap to fit your unique workloads, and expert mentorship every step of the way.



Data-Driven Insights:

Thorough assessment of your current environment, with recommendations specific to your desired outcomes.



Licensing Selection and Software Asset Management:

Navigate the complexity of vendor consolidation, licensing and asset management.



Enterprise Grade Managed Services:

Thorough assessment of your current environment, with recommendations specific to your desired outcomes.



Technology Mentorship:

One-on-one, or event-style coaching to develop the skills of your team, and keep up with the pace of innovation.

SUMMARY

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Why IBM:

IBM POWER systems are built for the most demanding, data-intensive computing on earth. Our cloud-ready servers help you unleash insight from your data pipeline—from managing mission-critical data, to managing your operational data stores and data lakes, to delivering the best server for cognitive computing.

With industry leading reliability and security, POWER systems are designed to crush the most data-intensive workloads imaginable, while keeping your business protected.

To learn more about IBM POWER9 and other solutions from IBM, visit [IBM.softchoice.com](https://www.ibm.com/softchoice.com). Or, if you're ready to chat with a Data Center Solutions Advisor, click [here](#).

Sources:

- ¹ Salesforce (blog), "Do Consumers Want Personalization or, Simply, Relevance?" May 7, 2018.
- ² Marketing Profs, "The Personal Information Consumers Will Share with Brands," October 26, 2017.
Fourth Source, "Consumers willing to share data in exchange for benefits, survey shows," July 3, 2018.
MarketingLand, "Survey: Consumers willing to share personal data for deals, better customer service," April 18, 2017.
CSO Online, "Privacy-privy consumers don't mind some data sharing—with companies they trust," May 15, 2018.
- ³ TNW, "The global state of the internet in April 2017," April 11, 2017.
- ⁴ *Infosecurity Magazine* "Cybercriminals earn millions, and spend it wildly," April 13, 2018.
Investment Executive "Cybercrime is on the rise," March 1, 2018.
- ⁵ Dentsu Aegis Network, "CMO Survey 2018: How Brands Win in the Digital Economy," July 2018.
- ⁶ Verizon Enterprise, 2018 Data Breach Investigations Report.
- ⁷ OpenPOWER Foundation (blog), "OpenPOWER Ecosystem Spurs Innovation in AI and Hyperscale Datacenters."
- ⁸ Forbes, "Google Confirms POWER9 Processor Data Center Deployment At OpenPOWER Summit 2018," March 19, 2018.
- ⁹ *The Economist* "The world's most valuable resource is no longer oil, but data," May 6, 2017.
- ¹⁰ IBM POWER Systems documentation
- ¹¹ CSO Online, "Spectre and Meltdown explained: What they are, how they work, what's at risk," January 15, 2018.
- ¹² IBM, "Enterprise AI: Your search for the right IT infrastructure is over"
- ¹³ TechCrunch, "IBM's new Power9 chip was built for AI and machine learning," December 5, 2017.

